

Serial No. 10/525,026
Atty. Doc. No. 2002P12057WOUS

REMARKS

Applicants appreciate the thorough examination of the subject application. In this paper certain claims have been amended as set forth above. Applicants respectfully request allowance of the present application in view of the amendments and remarks presented herein.

Claims 16-29 and 31 have been rejected under Section 102(b) as anticipated by Jourdain (6,541,964).

To further define the invention over the prior art the Applicants have revised independent claim 16 as set forth above. These amendments are supported by at least paragraphs [0020] and [0036] of the application as filed. No new matter has been added by these amendments.

Jourdain discloses determining the hydride content within a substrate where one or more layers may be present on an outside surface of the substrate. As Jourdain explains beginning at column 3, line 1, a combined electromagnetic field (a combination of a first electromagnetic field applied in the vicinity of the measurement substrate and a second electromagnetic field generated by eddy currents induced in the substrate by the applied field) is measured and also calculated based on certain assumed values for substrate parameters that affect the combined field. Certain of the assumed values are modified during iterative calculating steps until the calculated combined field is equivalent to the measured combined field. The parameter values used for the calculation when field equivalence is achieved represent the parameter values for the substrate.

To determine the hydride content one of the parameters comprises substrate conductivity. The conductivity determined for the substrate, as described above, is compared with the conductivity of multiple substrate samples, each sample having a different hydride content and a corresponding different conductivity. The hydride content of the substrate under test is the hydride content of the substrate with a conductivity that matches the determined conductivity. See Jourdain at column 9 beginning at line 1.

In column 3 beginning at line 61, Jourdain discloses the use of a wide range of frequencies and magnitudes for the applied field. Apparently the use of different frequencies and magnitudes obviates any frequency dependent effects manifested by the material parameters, since it is known that certain such parameters have a frequency dependent component. Using several frequencies and magnitudes to generate the applied field therefore provides more

Serial No. 10/525,026
Atty. Doc. No. 2002P12057WOUS

accurate parameter values when the measured combined field and the calculated combined field are equivalent.

Jourdain fails to disclose the use of different frequencies that produce different depths of penetration into the body material, including a first signal having a depth of penetration including the base material and a second signal having a depth of penetration into the degraded region, as claimed in amended claim 1. Claim 1 is therefore allowable over the cited art.

Each of the dependent claims 17-29 and 31 depending from claim 16 further distinguishes the invention as claimed as each defines a novel and non-obvious combination of additional elements. It is therefore respectfully submitted that these dependent claims are allowable over the cited art. Certain of these claims have been amended as set forth above for consistent term usage with the independent claim 16 from which they depend.

New claim 32 depending from independent claim 16 has been added. This claim finds support in the original specification at paragraph [0036]. Like the other dependent claims in the application, this claim defines a novel and non-obvious combination of elements.

Conclusion

The Applicants have responded to all of the claim rejections and objections in the Office Action and it is believed that the claims 16-29, 31 and 32 remaining in the application are now in condition for allowance. It is respectfully requested that the Examiner reconsider these rejections and issue a Notice of Allowance for all pending claims

If a telephone conference will assist in clarifying or expediting this Amendment or the claim changes made herein, the Examiner is invited to contact the undersigned at the telephone number below.

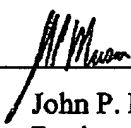
Serial No. 10/525,026
Atty. Doc. No. 2002P12057WOUS

The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: 1/11/07

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